REMARKS

Applicants and the undersigned are most grateful for the time and attention accorded this application by the Examiner. The Office is respectfully requested to reconsider the rejections applied against the instant application in light of remarks presented below. Attached hereto is a marked-up version of the changes made to the specification by the current amendment.

The drawings have been objected to under 37 CFR 1.84(p)(5) because they include certain reference signs not mentioned in the description. The specification has been amended to correct typographical errors with respect the reference signs identified in the Office Action. The drawings are also objected to because it is asserted the docket notations at the top of each page will have to be removed when formal drawings are submitted. This objection is not understood as formal drawings were submitted on July 25, 2001. To expedite prosecution, however, submitted herewith are substitute formal drawings with out the docket notations. Reconsideration and withdrawal of all drawing objections are thus hereby respectfully requested.

Claims 1-13 are pending in the instant application. Claims 1, 7, and 13 are independent Claims; the other claims are dependent Claims.

Claims 1, 4-7 and 10-13 stand rejected under 35 USC 102(b) as anticipated by Wantanabe et al. Reconsideration and withdrawal of the rejection is hereby respectfully requested.

Independent Claims 1, 7 and 13 as currently written specifically require "transforming the input pattern to provide a set of at least one feature for a classifier" and "said transforming step comprising the step of minimizing the probability of subsequent misclassification of the at least one feature in the classifier". (Claim 1) Similar language appears in the other independent claims. The Office asserts that both of these elements are disclosed in Wantanabe et al., with the feature extraction section 1 of Fig. 2 reading "on the feature of transforming the input pattern to provide a set of at least one feature for a classifier" and Col. 18, lines 9-24, reading "on the feature of minimizing the probability of subsequent misclassification of at least one feature in the classifier". Applicants respectfully traverse this rejection under 35 USC 102(b).

A Section 102(b) rejection requires that "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States". A review of the materials cited by the Office show this is not the case with respect to Wantanabe et al. While Figure 2 of Wantanabe et al. includes a "feature extraction section" 1, this Figure is labeled "Prior Art". This is consistent with the statement in the present application, "[t]he makeup and function of a feature extractor, classifier and post-processor are generally well-known to those of ordinary skill in the art." (Page 6 lines 6-7). The Office, however, has not pointed to any indication in Wantanabe et al. that such an arrangement is used in connection with the description at Col. 18, lines 9-24, asserted to read "on the feature of minimizing the probability of subsequent misclassification of at least one feature in the classifier". Thus, the Office has

taken a portion of the prior art illustrated in this reference (but not practiced by the reference) and combined it with another portion of the reference (in the absence of any teaching of combining the two) to make this rejection. Applicants respectfully submit that such is improper and the rejection should be withdrawn.

Dependent Claims 2 and 8 stand rejected under 35 USC 103(a) over Watanabe et al. and in further view of Chittineni et al. Dependent Claims 3 and 9 stand rejected under 35 USC 103(a) over Watanae et al. and further in view of Guorong et al.

A 35 USC 103(a) rejection requires that the combined cited references provide both the motivation to combine the references and an expectation of success. Not only is there no motivation to combine the references, no expectation of success, but actually combining the references would not produce the claimed invention. Thus, the claimed invention is patentable over the combined references and the state of the art.

The Office has admitted that none of the applied references describe the invention but claims that combination of these teachings would be obvious to a person skilled in the art. This is not supported by the references. The rejection fails to take into account the absence of the claimed invention in each reference. In the absence of the invention, there can be no expectation of the results obtained.

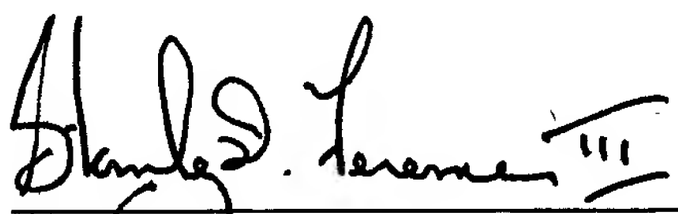
In view of the foregoing, it is respectfully submitted that independent Claims 1, 7 and 13 fully distinguish over the applied art and are thus allowable. By virtue of

dependence from what are believed to be allowable independent Claims 1, 7 and 13, it is respectfully submitted that Claims 2-6 and 8-12 are also allowable.

Applicants recognize that the Office has considered the prior art made of record but not applied against the claims to have been not sufficiently relevant as to have been applied against the claims.

In summary, it is respectfully submitted that the instant application, including Claims 1-13, is in condition for allowance. Notice to the effect is hereby earnestly solicited.

Respectfully submitted,



Stanley D. Ference III
Registration No. 33,879

FERENCE & ASSOCIATES
400 Broad Street
Pittsburgh, Pennsylvania 15143
(412) 741-8400
(412) 741-9292 - Facsimile

Attorneys for Applicants

MARKED-UP VERSION OF AMENDMENTS

The second sentence of the paragraph beginning at Page 6, Line 15, is rewritten as follows:

-- Records ([104] 120) are input and a full-covariance [g]Gaussian clustering of the records is undertaken for every class (122). --

The last sentence of the paragraph beginning at Page 7, Line 1, is rewritten as follows:

-- If the optimization converges (132), then all of the records **x** are transformed into **y** = q**x**, and the resulting output ([106] 134) represents the final features for the classifier 108 (*see* Fig. 1). --

The second sentence of the paragraph beginning at Page 15, Line 1, is rewritten as follows:

-- The baseline system had 2.3 K context dependent HMM states and 134K diagonal [g]Gaussian mixture components and was trained on approximately 70 hours of data. --

The first sentence of the paragraph beginning at Page 15, Line 6, is rewritten as follows:

-- For the divergence and Bhattacharyya projections, every 9 consecutive 24-dimensional cepstral vectors were spliced together forming 216-dimensional feature vectors which were then clustered to estimate one full covariance [g]Gaussian density for each state. --

The second sentence of the paragraph beginning at Page 15, Line 12, is rewritten as follows:

-- The best results were obtained by considering each individual HMM state as a separate class, with the priors of the [g]Gaussians summing up to one across states. --

The one sentence paragraph beginning at Page 16, Line 4, is rewritten as follows:

-- The routine performs an iterative update of the inverse of the [h]Hessian of the objective function by accumulating curvature information during the optimization. --

The first sentence of the paragraph beginning at Page 16, Line 8, is rewritten as follows:

-- The parameters of the baseline system (with 134K [g]Gaussians) were then re-estimated in the transformed spaces using the EM algorithm. --